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THE FORE-ARM – A LEVER IN YOUR BODY

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An article in a Sunday edition of the Hindu titled "Flexing Body Levers" by Eugene L. Chiapetta gave us the impetus to plan the worksheet reproduced below and try out the activity with students of Class VIII in our Science Activity Centre. The purpose of the worksheet was to integrate and highlight a concept of Physics (the working of levers) and some concepts of Biology (the structure of the arm). The students had already studied as a part of their Physics course, the working of levers, the three classes of levers and had an idea of the term mechanical advantage (MA) of levers.

As pointed out in the article, the first and second class of levers e.g. the crowbar and the wheel barrow respectively, have a mechanical advantage greater than 1. This implies that due to the long effort arm the effort expended is less. However, such levers have the disadvantage that the distance through which the load moves is small.

In a third class lever such as the broom, and to which the forearm also belongs, the mechanical advantage is less than 1. The result is that more effort has to be applied due to the short effort arm. However the advantage is that the load arm is able to move the load through a greater distance.

These points should be kept in mind in the discussion which accompanies the exercise. It is perfectly possible to carry out the exercise without any reference to mechanical advantage. The necessary changes may be carried out in the worksheet. Children will still experience the working of a lever in the body.

The practical work focusses on locating the tendon that joins the biceps to the forearm, measuring the effort arm, calculating mechanical advantage, getting an actual feel for the effort expended by lifting a brick in two ways, comparison of the mechanical advantage obtained by different students and finally a discussion on two other muscles of the arm — the *brachialis* and the *brachioradialis*.

The Worksheet

The muscle and bone arrangements of your body form many lever systems. Bones serve as the levers, joints are the fulcrums and muscles contract to exert force (effort).

I. In this picture mark the positions of

- i) the fulcrum
- ii) the load

The effort is applied at the point where a large tendon connects the biceps muscle (*biceps brachii*) to the forearm.

What is a tendon ?

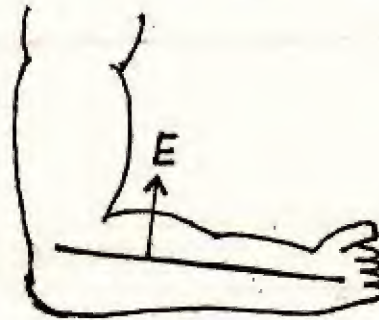


Fig. 1

II. Flex your upper arm and feel the bulge of your biceps first.

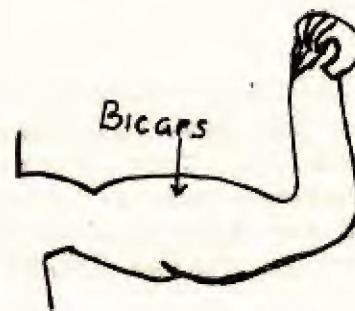


Fig. 2

III. To locate where the tendon joins the biceps to the forearm place your arm (hand) under a table and pull upwards on it. Observe the tendon of your forearm which becomes stiff and raised. It is joined to the forearm at point.

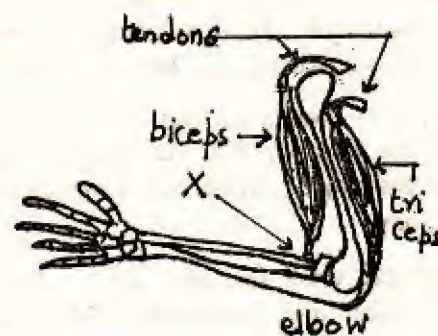


Fig. 3

- IV. Measure the distance from this point to the bend of your elbow (the fulcrum). This is the *effort arm*. Measure the distance from the centre of your palm to the fulcrum. This is the *load arm*.

Record your answers here :

Effort Arm =

Load Arm =

- V. Each group has been given a brick. Find out its weight and record it here.
Weight of brick =
- VI. Write down the law of Levers
- VII. Calculate how much effort you would require to lift the brick.
- VIII. The mechanical Advantage (MA) of a lever is given by

$$M.A = \frac{\text{Load}}{\text{Effort}} \text{ or } \frac{\text{Effort arm}}{\text{Load arm}}$$

Calculate the Mechanical advantage of your forearm

- IX. Lift the brick (Load) and 'feel' the effort required when you lifted the brick.

Tick the correct answers.

- a) Which force was more — the load or the effort ?
b) Which force moved through a greater distance — the load or the effort ?

When the MA is less than 1, the effort is larger than the load. The effort will however move through a smaller distance than the load. Thus the pull of your biceps muscle (the effort) is much more than the load lifted (the brick), but your forearm moved through a small distance while your palm which carried the load moved through a much larger distance.

Now lift the brick again and feel this for yourself.

- X. Next rest your elbow on the table. Place the brick on your palm and lift it again without letting your elbow lift off the table. Does the weight of the brick feel greater when lifted off the table this way ?
Why do you think there is a difference ?
- XI. Did all the members of your group get the same answer for the MA of the forearm ? If not, can you think of at least two reasons for this difference ?
- XII. Although the biceps muscle does much of the work in raising the forearm at least two other muscles are involved. One of these is the *brachialis*—a muscle under the biceps. It originates at the middle of the *humerus* and inserts below the elbow on the top part of the *ulna*. The *brachioradialis*, most prominent as a muscle of the upper arm, originates at the lower end of the *humerus* and inserts on the *radius* at the wrist.

Find out and mark the positions of the *humerus*, the *ulna* and the *radius* on Fig III.

When we actually tried out the activity in three sections of Class VIII some interesting insights and problems came to the fore.

(Contd. on page 9)

TIN-CAN EXPERIMENTS-IV

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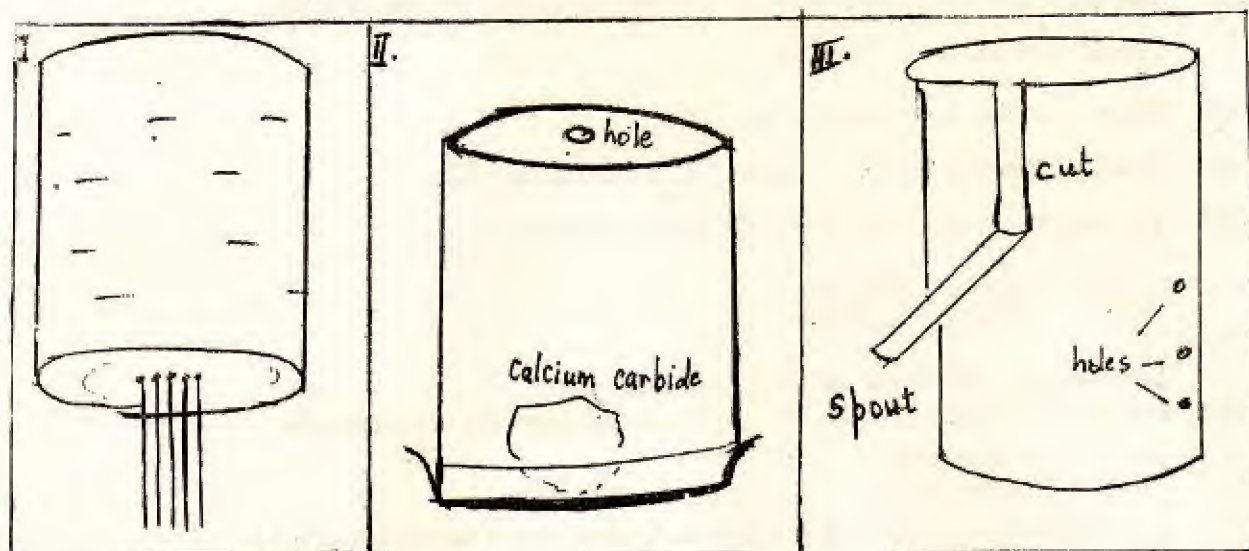


Fig. 4

I. Pinching Water

Take a can and near its lower edge make four pin holes separated by a distance of 0.5 mm. Pour water in the can. Does the water come out in different streams? Pinch the water coming out of the holes with your finger. What do you observe now? What do you conclude from the experiment?

Block these holes with plastic or modelling clay and make new holes separated by a distance of 1 mm. Repeat the experiment.

Perform the experiment once more with holes 1.5 mm apart. How does the increase in the distance between the holes affect the pinching of water coming out of the holes.

Repeat the experiment with other liquids and compare the results.

II. Booming Can

Take a tin can. Make a hole at the centre of its bottom. Place the lid of the can on the ground, place a lump of calcium carbide on the lid. Pour two or three drops of water on the lump of calcium carbide. Place the can inverted on the lid as shown. Block the hole in the can with your finger for some time. Remove the finger and bring a burning matchstick near the hole. Perform this experiment outdoors. What do you observe? From which side do the hot gases escape? To which side does the can move? What do you conclude from the experiment?

III. The Pressure Of A Liquid Varies With Its Depth

Take a can and make three holes on its curved surface at different heights. On the top of the can make two parallel cuts with a tin cutter. Bend the strip between the cuts outward to make a spout. Hold the can under a running tap. From which hole does water go to the maximum range in the plane of the lower edge of the can? From which hole does water go to the maximum range on the ground? From which hole do you think water is being forced out with maximum pressure? What do you conclude from the experiment? Why do you think the spout was made in the side of the can?

IV. Liquid Pressure Acts Normally To Walls Of Container

Take a tin can and make some holes (about six) on its curved surface at various positions. Fill the can with water and observe the water coming out of the holes carefully. At what angle does water come out from the surface of the can?

Hammer the can to twist it out of shape and fill it with water. At what angle to the tin surface does water come out from the hole now? What do you conclude from the experiment?

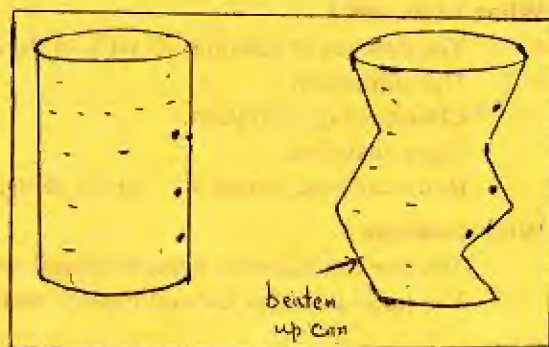


Fig.5

V. Resonance

Take two tin cans and tie each of them to a long stout thread (1 m. long). Tie another thread across two stools or chairs. Suspend the cans from this thread as shown. Fill the cans with sand.

Oscillate one of the cans and wait for some time. What happens to the second can? What do you observe regarding the oscillations of the two cans? Is their amplitude same or different?

Change the length of the thread of one of the cans and repeat the experiment. Do you observe any difference in the amplitude of oscillation of the two cans now?

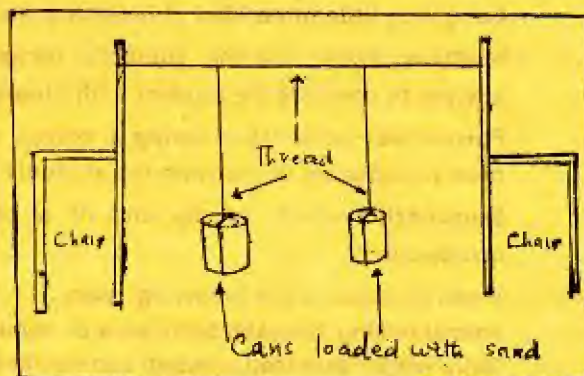


Fig 6

ASSESSMENT AND EVALUATION : SOME BASIC QUESTIONS ANSWERED ; SOME POINTS TO KEEP IN MIND

Why assess ?

- To place students in rank order.
- To motivate the student.
- To predict future performance.
- To provide feedback on the students' performance.
- To judge the success of a teaching method or approach.
- To assess the teacher's progress.

What to assess ?

- The process of learning as well as the product of learning.
- The curriculum
- Classroom organization
- Pupil response
- Non-academic progress : social skills, study skills, emotional and personality level.

Who assesses ?

- The teacher assesses herself/himself and the pupils.
- The pupil assesses himself/herself and the teacher.

How to assess ?

Assessment can be :

Criterion-referenced—showing what individual learning objectives the student has mastered, without comparison with any other student.

Norm-referenced—used to make comparisons between students, placing them in rank order but giving little or no idea of individual strengths and weaknesses.

Ipsative—comparing the student's performance with his/her previous performance, with no attempt to compare the student with others.

Formative—undertaken during a course of teaching, can be used to make course correction, offer remediation or motivate the students to make future improvements.

Summative—made at the end of a course of teaching, to measure the student's final achievement.

It can be done in the following ways :

Formal testing (weekly, term-wise or annual)

Daily work—assessed, graded, commented upon.

On-going evaluation—both private, by the teacher in a note-book, and shared with the pupil.

Observation of the students at work.

Inviting another teacher or the Head to observe and assess a lesson.

Asking the pupils to fill in a questionnaire.

Pupils' own progress records, recording difficulties, achievements and milestones, and each new technique or skill mastered.

Work planned in stages, with each stage 'tested' before moving on to the next stage.

WHAT SCHOOLS AND DOING

Tests, examinations and reports are synonymous with school. Here are the assessment and evaluation systems followed by some schools in Calcutta for evaluating academic progress.

System Followed

Half-yearly and Final exams, twice a year. Plus class tests/exercises, spaced out and added up twice a year. Reports are given out. 4 times a year.

Advantages

By adding up the marks of assorted class exercises spread out over the months, assessment becomes more comprehensive and fair. It is a flexible system that allows teachers to assess written and verbal responses through objective, short answer, practical demonstration and essay type exercises. Relying just on the marks of the half-yearly or final examination is not a truly representational form of evaluation.

Disadvantages

Teachers have to be careful not to burden the pupils with too similar class tests. Small units of work should be assessed. Non-academic progress is not evaluated through this system.

25+25+25+25

Comprising : prepared test, surprise test, class response and homework (mostly learning work). These tests are given each month to reach a total of 100 marks. They are alternated with 100 mark block tests.

Eases term-end tension, and assesses aspects of development such as effort and application, class involvement etc.

Teachers find it difficult to conscientiously record individual pupils' class response and homework.

Continuous assessment through 20 mark repetitions. Weekly reports with grades covering performance/progress in written and oral work, conduct, attention. Examinations of 100 marks each on a particular subject every week.

Close monitoring of pupils' performance in daily work. The tension of a block of exams at the end of term is done away with as exams, are distributed through out the term.

Heavy pressure on the pupils because of the weekly reports, and over emphasis on marks and results.

— Reproduced with permission from Teachertalk — April 1987 issue

SCIENCE GAMES

Here are two games which can involve all the children in your class and help them understand important science concepts. They are suitable for upper primary or middle school classes. Discussion after the game is essential to consolidate their understanding of the science aspects.

Circulation

Play this game after the students have read about the human circulatory system in their textbooks. It can be played in the classroom after shifting desks to the sides, or better still on the playground. Preparatory work and explanations must precede the actual game.

Each student in the class will need twenty plain, white cards about 8 cm × 10 cm in size. On these cards he/she will print one of the four words OXYGEN, CARBON DIOXIDE, FOOD, WASTE— making five cards of each kind.

Two students are selected to be the "lungs" four students the "heart", one the "small intestine", two to be "body cells" and one or two students to be the "kidneys". Large placards are made and pinned on to these students to let everybody know which part of the body they represent.

The cards made by the students are sorted and distributed as follows :

The "oxygen" cards are given to the lungs.
The "food" cards are given to the intestines.
The "carbon dioxide" and the "waste" cards are given to the "body cells".

The different parts of the body place themselves around a large room or playground in correct order. The remaining students acting as the "red blood cells" circulate from one body part to another, marching in a circular, clockwise manner. As the "blood cells" leave the "heart" they pass through a narrow passageway formed by two parts of the "heart" (two students facing

each other) and are given a gentle push towards the lungs. Likewise when they return from the lungs, leave the heart for other parts of the body or return to the heart at the end of their journey a gentle push or pull regulates their rate of movement.

At the "lungs" the "red blood cells" pick up one "oxygen" card each. They travel to the "intestines" and pick up one "food" card each. When they reach the "body cells" they exchange these cards for a "carbon dioxide" card and a "waste" card. They travel on to give the "waste" card to the "kidneys". Finally they return via the "heart" to the "lungs" where the "carbon dioxide" card is exchanged for an "oxygen" card. This begins the cycle all over again.

Allow the children to go through this "circulatory system" several times. Intermittent questions like these guard against oversimplification of this highly complex system and maintain interest.

- * Which ones represent the venous system ?
- * In which blood vessels does the exchange of oxygen and food for carbon dioxide and wastes actually take place ?
- * Can you point out which parts of the heart contain oxygenated blood ?

Talk about the enormous length of the blood vessels. The millions of blood cells in circulation, how their number is maintained, the volume of blood circulating, the amount pumped by the muscular heart daily and other such interesting facts. Older students might find out such details and put them up on the bulletin board.

Finally ask students to write in their own words a short description of the circulatory system, including the correct sequence and the function of the important organs/body parts they have learnt about.

The Camouflage Game

Materials : Potatoes, beans, carrots or other vegetables; white paper or paint to cover them; plasticine, coloured cellophane paper, cotton, glue, paints, toothpicks.

The class is divided into two or more teams. Each is allotted a work area. These areas must not be too close together. Each team must not be able to see what the others are doing.

The vegetables are painted white (or covered with white paper) on the previous day. Each person in a team is given a vegetable. He or she must use it to form the body of an 'animal' which can be hidden or camouflaged in the natural surroundings of their own work area. The other parts of the 'animal' may be made out of toothpicks and any available material found in the area. After making the 'animal' the student puts it in a place where colouration

or form helps it blend into the surroundings. A time limit is set by the class teacher for this part of the game.

The teams then exchange places and try to find the hidden 'animals'. Obviously the best team has done its work well and the fewest of its 'animals' are found. Participants can be asked to point out where they have placed the undiscovered 'animals'. Discuss :

- i. Why some of the 'animals' were found and others were not
- ii. In what other habitats would your animals be well hidden.

•

Name some animals you know that are protected by camouflage.

Name some animals that are not protected in this way. How do they defend themselves from predators ?

(Contd. from page 3)

The first problem encountered even before the worksheet was made, was in the location of point of attachment of the tendon that joined the biceps to the forearm. For this the help of a medical practitioner was sought. The same problem arose when doing it with the students. The teachers had to go to most of the students individually to help them feel their forearms, to point out the taut tendon and its farthest point of attachment. Before trying this activity with the students, readers should go through the exercises themselves.

The actual calculation of mechanical advantage presented no difficulty. However, some time had to be spent discussing the fact that the accuracy of the calculation depended to a large extent on the correct location of the point of attachment of the tendon to the forearm. It was also pointed out that this may be one of the factors, though not the only one, responsible for differences in the results of different students.

The greatest difficulty encountered was in the actual 'feel' of the effort expended by lifting a brick in two different ways. Some students felt it was easier to lift it with the forearm free and close to the body, while others were equally certain that keeping the elbow on the table made it easier (Exercises IX and X). In explaining why it is easier with the forearm free and next to the body, we could not resort to the concept of complex levers and multiple fulcrums. However, in consultation with senior physics teachers of our school, we did talk about the fact that muscles of the upper arm also help in lifting the load when the arm is free. If the elbow rests on the table only one lever — the fore-arm—is brought into operation. In that position the point of the elbow becomes a fixed fulcrum. The biceps muscle provides the effort and the load rests on the palm. The arrangement corresponds to a simple lever of the third class.

CREATIVE WRITING

The Development of Programmes For Gifted And Talented Students In The Middle School

The last in the series of these workshops was conducted by Ms. Rosalind Wilson, Editor, Target. It was a refreshing experience for the teachers who had an opportunity to allow their imaginations to run wild. The workshop started with Ms. Wilson introducing herself with a series of untruths, not fathomed by the audience, but which were later exposed. This gave the teachers an exercise of introducing themselves by uttering a few lies! The greatest revelation was that they found it much easier to say something that was not true! Try this out yourself as the first activity. Read through these ideas and have a nice time!

Activity 2 :

Have a look at your invented 'self'. How would that character react, if faced with a disaster? Make your students invent such 'selves'. FREEDOM to think generates new and unique ideas. It encourages originality, fluency, flexibility, courage and complexity.

Activity 3 : Found Poems

Take up a newspaper or a magazine and look for any eye-catching text. Turn it into a poetic form of free verse. An example :

She encouraged me
to be free
and
extravagant in what I wrote
so I could find
what was hidden in me
that I had to say

Incidentally, this was taken to be the motto of the workshop. What is the point of making poems out of someone else's prose? It encourages sensitivity to the rhythm and shape of poems—a feeling of what is poetic. Without

stressing on the formal aspect make it exploratory and fun! Don't dissect too much, but have the children read aloud their 'found' poems. The way of reading should echo the breaks and emphasis. Remember humorous poems have a place here too!

Activity 4 : I Wish.....

Write an 'I wish.....' poem. Every line must begin with 'I wish'.

An example : I wish I were big and tall
I could then reach for the shelf
With no fear of a fall!

What do you get out of this simple idea? Yes..... a simple form, tremendous freedom to be as extravagant or truthful as you wish and a chance to be personal, to enter the private world of the writer's own wishes! Repetitive forms can give a poem the unity which otherwise rhyme achieves. For most children, rhyme destroys their free-flowing ideas and associations.

Activity 5 : Other repetitive forms :

Write a 'noise' poem, a 'colour' poem, a 'comparison' poem. In each case every line must contain one noise, one colour or one comparison. Some examples : A Colour poem :

On the jam-packed road
Red Marutis crawling like beetles,
White Fiats parked like lilies
Black bicycles like bees
Buzzing over a grey road

A Comparison poem :

A tree is as green as a roaring lion
Clouds are like flying ice cream
A breeze is like the sky coming to you

The clouds are as white as the bursting of a
fire cracker

Activity 6 : Formal repetition of words :

- a. I seem to be..... but I really am...

Example : I seem to be as confident as a water lily on a tall stem. But really I'm afraid of being the stagnant pond beneath—BORING !

- b. I used to think But now I see.....

- c. Hello.....

Goodbye.....

Example : Hello holidays

Goodbye, school

Hello visiting aunts

Goodbye snack time with friends.

- d. I used to be..... But now I am.....

What is the point of giving these forms ? They give a framework so that the child can concentrate on thinking of the substance of what s/he wants to say. They each concentrate the mind on a single idea or relationship.

Activity 7 : Using poems as starters :

Apologise to someone without really feeling sorry about what you have done. An example : I am sorry..... / I ate the fruits you had left for breakfast / They were so sweet and delicious / You should be happy there was someone to enjoy them...

"The first day's activities concluded with these seven exercises. Day two started with an "awareness exercise".

Activity 8 : A plea for practising 'heightened awareness'

In the morning teachers were asked to :

1. Think back over the time between the last evening and the following morning. Think of sharp, bright images, sights, sounds. Think of moments of heightened emotions. Did you have one memorable thought? It could even be a snatch of conversation. Close your eyes and let the images of the last eighteen hours flow.....

2. Write down things worth recording. Write in prose, poetry or in any form you like.

3. Share your thought or image or moment

with others. Notice how you are drawing on personal experience, letting the mind move inward and allowing freedom of form.

Activity 9 : Waking up the senses :

For good writing all the senses need to be sharpened. Choose an abstraction—like war or a quality-like honesty or an emotion-like joy Experience it with all your senses :

An example :

JOY is like a crimson rose

It tastes like ice cream

It smells like the morning dew

It sounds like raindrops on the roof

JOY makes me feel I'm sleeping on the horizon.

Activity 10 : Using music as a 'starter'

Ten minutes of Chaurasya's music (Eternity) was played. Music should be considered as the sound track for a film. Allow sights, sounds and images to flow into the mind. When the music is over, write something out of your experience. Don't write ABOUT the music, write about WHAT it BROUGHT to your mind. Write in poetry, prose or in whatever form you wish.

Activity 11 : Grab bag assignments :

These are ideas for writing which you can just 'pull out of the hat' and throw at the class without preparation. They should be original enough to grab the attention of the children straightaway, and set them writing straightaway.

Examples :

1. One day, there's a ring at the door. The person at the door tells you that you've just won a first prize at the contest. You look outside-and see an elephant ! What would you do ?

2. You are the last member of your species about to die. How would you be feeling ?

3. Write a letter to a part of your body and the reply.

(Contd. on page 15)

ART AND CRAFT IDEAS FOR PRIMARY CLASSES

Using Plaster of Paris

- a) Making paper weights. Pour plaster into a polythene bag or a balloon.

Model and twist a shape before the plaster sets. When dry remove bag or pop balloon. Paint and varnish.

- b) Make a small mould of wet sand. Press objects in and remove to make an imprint. Pour in plaster carefully. When set remove from sand. Sand will adhere to plaster to give a pleasant texture
- c) Put plasticine into a box (shoe box ideal). Carve or press objects into it. Pour in the plaster. Allow to set. Remove plasticine. Paint and varnish.
- d) Pour plaster into a box lid. Sprinkle dry paint on to the surface and paint with fingers before the plaster sets. Varnish when dry.

Using String

- a) Arrange string into a pattern on the table. Place paper on top and secure with cello tape. Rub with a dark crayon to make a print.
- b) Paint the string and print with it on piece of card. Experiment with different colours.
- c) Fold a piece of paper in half. Paint a piece of string. Arrange string inside folded paper. Hold flat and pull out string from within paper. A delightful smudge print is the result.
- d) Hammer nails haphazardly into a piece of wood previously painted black. Arrange string around nails to make a design. Try using coloured threads wools.

Miscellaneous

- a) Sprayed pictures. Children to cut out paper shapes. Arrange on white paper. Spray round edges. When dry remove and respray with a different colour if wished.

Try toothbrush dipped in paint and rubbed over wire-mesh to get spray effect.

- b) Charcoal and chalk pictures on tissue or kite paper. (Messy but satisfying).
- c) Paint and crush egg shells. Paste on paper to make a mosaic.
- d) Draw with felt pens on wet paper.
- e) Cut shapes out of card paper. Change basic shape by cutting in different directions and moving out the parts. Use as a jigsaw.

OR

Change the shape by cutting and folding back paper to form new shapes.

- f) Cut out a design (stencil) from a card and outline using wax crayons round edges—a house, fish, bird, animal is most satisfactory. Move stencil along and repeat.
- g) Paint a pattern with glue and sprinkle sand on while wet.
- h) Straw pictures—Brush one side of a drinking straw with glue. Mount on black paper. Paint in between the straws. Perhaps the background could be painted first.
- i) Roll plasticine into a long snake shape. Arrange and press down onto a piece of tissue/kite paper. Paint the paper around the plasticine. Remove plasticine to reveal plain paper inside the painted areas.

Reproduced from an article by Gill Knight in the July 1979 issue of PATHWAYS.

SOME INTERESTING EXERCISES IN ENGLISH LANGUAGE

I. Making Lists

1. Write out the first list of verbs below as two equal lists. Head the first "Quick Actions" and the second "Slow Actions".
2. Write out the second list of verbs as two equal lists. Head the first "Cheerful Actions" and the second "Sad Actions".
3. Make two equal lists of the third list also. Head the first "Pleasant Actions" and the second "Unpleasant Actions".
4. Make two equal lists of the adjective in the fourth list. Head the first "Pleasant" and the second "Unpleasant".
5. Make two equal lists of the adjectives in the fifth list too. Head the first "Praising" and the second "Blaming".

1. plod	2. laugh	3. cheat	4. ugly	5. polite
limp	moan	lie	grimy	rude
hasten	cheer	smile	beautiful	generous
gallop	joke	laugh	handsome	truthful
stroll	weep	help	pretty	brave
creep	groan	steal	dirty	mean
crawl	dance	rob	horrid	selfish
rush	sigh	bully	lovely	honest
run	sob	rescue	hideous	considerate
dash	grieve	nurse	frightful	helpful
hobble	smile	quarrel	charming	boastful
hurry	whistle	sulk	graceful	impudent
saunter	giggle	encourage	foul	dishonest
sprint	mourn	befriend	bonny	cowardly

II. Enlarging Sentences

The dog ran away.

Do the following things to the short sentence above :

- a. Add four words to describe the dog.
- b. Add four words to tell where he ran.
- c. Add three words telling how he ran.
- d. Add any number of words you like telling why he ran.

You will then have made four sentences like this :

- a. The dog with the black spots ran away.
- b. The dog ran away through the broken fence.
- c. The dog ran away in great haste.
- d. The dog ran away, because he was frightened.

Now rewrite the following sentence in the ways required.

Susan fell down.

1. Add one word to describe Susan.
2. Add three words to tell where she fell down.
3. Add three words to tell how she fell down.
4. Add a few words telling why she fell down.

Kenneth met his friend.

5. Add three words to describe his friend.
6. Add three words to tell when he met his friend.
7. Add a few words telling where Kenneth met his friend.
8. Add several words telling how Kenneth met his friend.

George was late.

9. Add one word telling when he was late.
10. Add a phrase telling where he was late.
11. Add several words telling why he was late.

III. Similar Proverbs

For each proverb in the first list there is one of similar meaning in the second. Write them out in pairs. Begin by pairing 1 and d.

1. Birds of a feather flock together.
 2. Unity is strength.
 3. More haste less speed.
 4. Clothes do not make the man.
 5. Don't count your chickens before they are hatched.
 6. Spare the rod and spoil the child.
 7. It is useless crying over spilt milk.
 8. Well begun is half done.
 9. Better a bare foot than none
 10. Big things from little things grow.
- a. You have to be cruel to be kind.
 - b. A good start is half the battle.
 - c. Haste trips up its own heels.
 - d. Men are known by the company they keep.
 - e. Half a loaf is better than no bread.
 - f. United we stand, divided we fall.
 - g. Appearances are deceptive.
 - h. There's many a slip between the cup and the lip.
 - i. Constant dripping wears the stone
 - j. Things done cannot be undone.

IV. An Exercise On Pronunciation

I have a tape of "20 vowel Sounds in English" done by the C. I. E. F. L.

The exercises given below are a good follow-up for the tape.

I. In each of these lines only two of the words have the same vowel sound. Underline them both.

1. rough, plough, bought, though, sprout
2. hook, fool, door, flood, foot
3. break, heart, head, bleak, heat
4. Son, hot, cold, wolf, cloth
5. prove, cove, love, lose, hover.

II. Underline the words in each of these lines which have the same vowel sound as the word in capitals.

1. **WEIGH** they, have, play, vein, key
2. **BURN** cure, heard, word, push, bird
3. **NOTE** toe, mouse, both, dough, storm
4. **RED** bead, said, theme head, meat
5. **MINE** give, high, sign, field, bit

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4. Have a conversation with yourself about something that you cannot agree upon.

Use these grab bag assignments when other teaching ideas fall flat! they always come in handy. **Valuable Suggestions :** As teachers, we have to believe that everyone can be creative. Our job is to remove obstacles to creativity, such as blank minds, distractions, impoverishment of experience, fear of failure, and frustration which sets in if the ability to express lags behind ideas. Enjoy creativity yourself !

Evaluation :

Creative writing should not be rigorously evaluated, but should be encouraged with

supportive comments and the real interest of the teacher. It should be freely shared with the whole class. In fact, publication on notice boards or the school magazine would be a good idea !

Your gifted children will benefit from a lively creative writing programme, but so will the less gifted, especially, if you make them believe that what they write matters—to you, to their classmates, and even more, to themselves !

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REGRET

Be not like him who sits by his fire side and watches the fire go out, then blows vainly upon the dead ashes. Do not give up hope or yield to despair because of that which is past, for to bewail the irretrievable is the worst of human frailties.

CITIZENSHIP

What is it to be a good citizen ?

It is to acknowledge the other person's rights before asserting your own, but always to be conscious of your own.

It is to be free in word and deed, but it is also to know that your freedom is subject to the other person's freedom.

It is to create the useful and the beautiful with your own hands, and to admire what others have created in love and with faith.

It is to produce by labour and only by labour and to spend less than you have produced that your children may not be dependent upon the state for support when you are no more.

FLOWERS

The flowers of the field are the children of sun's affection and nature's love; and the children of men are the flowers of love and compassion.

NEIGHBOUR

When you tell your trouble to your neighbour you present him with a part of your heart. If he possesses a great soul, he thanks you; if he possesses a small one, he belittles you.

YOUTH

Youth is a beautiful dream, on whose brightness books shed a blinding dust. Will ever the day come when the wise link the joy of knowledge to youth's dream ? Will ever the day come when Nature becomes the teacher of man, humanity his book and life his school ? Youth's joyous purpose cannot be fulfilled until that day comes. Too slow is our march toward spiritual elevation, because we make so little use of youth's ardor.

YOUR CHILDREN

You may give them your love, but not your thoughts

For they have their own thoughts

You may house their bodies, but not their souls

For their souls dwell in the house of tomorrow

Which you cannot visit, not even in your dreams

You may strive to be like them, but seek not to make them like you

For life goes not backward, nor tarries with yesterday

You are the bows from which your children as living arrows are sent forth

— Kahlil Gibran

All in vain is splendid preaching

And the noble things we say

All our talk is wasted teaching

If we do not lead the way

We can never be reviewing

All the sermons on the shelves

Keep the younger hands by doing

What we often do ourselves !

— Anonymous